

*Erebia aethiops* Esp. ab. *infasciata* Warren  
(Lep. Satyridae)

By A. D. A. RUSSWURM

On 8th August 1967, while collecting in Westmorland with my friend and co-collector Mr H. G. M. Middleton I had the good fortune to capture the rare and striking aberration of *Erebia aethiops* Esp. known as ab. *infasciata* Warren. In this aberration all markings on the underside of the hind wings are obsolete, on the fore wings the orange area is greatly extended.

The female of this species appears in two colour forms on the underside, in the typical form the hind wings are banded in shades of blue-grey, in the other, known as ab. *ochracea* Mosley, these bands are of buff or ochreous. It is to this form that the above mentioned aberration belongs. It immediately became my desire to have it in the beautiful blue-grey form.

We did not visit the area during the next two years, but in August 1970 the search for this aberration was resumed. We were not successful this year except that I captured the halved gynandromorph, this specimen is figured in "The Entomologist's Record" for October 1970. Then on the last day of our third visit, 3rd August 1971, a beautiful freshly emerged specimen of this much desired aberration was captured by Mr Middleton. We now have the aberration in both colour forms and the two specimens, showing both upper and underside, are figured on Plate XII.

One is not likely to forget the view from our collecting ground with the soft colouring of the estuary in the foreground and the mountains of the Lake District laid out in panorama beyond, nor the perfect hotel accommodation we have enjoyed during our three visits.

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*Maniola jurtina* Linn : A Breeding Experiment

By Major General C. G. LIPSCOMB

In early August 1969 I captured a ♀ *M. Jurtina* Linn ab *atrescens*. This fine variety has coal black undersides to the hind wings in both sexes and in the ♀ often with broad black margins to the undersides of the forewings. It is a striking and rare variety about which little is known and, as in this case the butterfly was in poor condition and not fit for the Cabinet, I determined to breed from it.

I assumed, not unreasonably, that it was very probably a recessive form and so should reappear in the F2 generation. I would add that in this case the butterfly had ab *excessa* characteristics with additional spotting on the underside of the forewings.

I knew nothing about breeding this butterfly and so consulted Alan Collier who remarked that he had had little

success with it and that it was quite the most difficult butterfly he had ever bred and that he couldn't think why it was so common.

This was hardly an encouraging start but at least it was a challenge and I determined to continue with my efforts. I placed the ♀ in a 15" x 12" cage the sides of which were of black nylon netting. She was supplied daily with fresh tufts of grass and flowers and fed on sugar and water on alternative days.

For several days nothing happened and then she suddenly made up her mind to lay and continued to do so for the next fortnight.

In all about 100 eggs were deposited and with the exception of a few laid on the actual woodwork of the cage all the rest were on the nylon netting; not one was laid on the grass so carefully provided.

This, of course, meant that the cage had virtually to be destroyed so that the eggs still attached to the netting and bits of wood could be placed on potted growing grass.

Because of the minute size of the young larvae the grass was enclosed in very fine muslin netting supported on a wire frame.

In mid October the pots were examined by holding them upside down supporting the contents with the fingers of one hand and gently agitating the grass with the fingers of the other. In this way the larvae, still very minute, readily dropped out and some 30 were collected and all placed in one pot. They passed the winter in a cold greenhouse with the door permanently open. Whether they continued to feed during the winter months I was unable to determine but I couldn't detect any evidence of either feeding or growth on the part of the larvae.

Mould on the grass was the great worry during this time and I constantly found myself having to remove affected stems with scissors and forceps. With the advantage of hindsight I think the better course would have been to change the food plant as soon as mould appeared because one can never eradicate it.

On 1st April the pot with its larvae was brought indoors into a cold room when the survivors at once started to feed and produced 17 pupae in late May and early June.

Some three weeks were spent in the pupal state and the first six butterflies to emerge were all ♂♂ followed by a mixture of both sexes.

The ♂♂ were placed under old fashioned wire gauze food covers in full sunlight on the lawn where a plentiful supply of white clover was growing. As the ♀♀ emerged they were slipped under the covers and mating invariably took place within 24 hours; on one occasion a pair was found in cop at 8.30 B.S.T. in the morning. All the butterflies to emerge were quite normal in appearance.

The ♀♀, once mated, were placed in three separate con-

tainers, the first a repaired edition of the previous year's cage, the second a 12" pot of grass enclosed in a butterfly net supported on a wire frame and lastly a cylindrical celluloid cage containing growing grass and with two large windows cut in its sides and covered with nylon netting for additional ventilation. No eggs were laid by any of the ♀♀ till they were at least a week old but in the end a large number were produced and again the vast majority were laid on the netting so that my bill at the end of this period was two breeding cages and a butterfly net destroyed and the netting on the cylinder requiring replacement. I began to see the point of A.C.'s remarks quoted earlier in this account. All the eggs coloured up, proving they were fertile but it was noticed later on, after they had been distributed amongst a number of pots of grass, that a high proportion had failed to hatch.

However, in spite of this I started the 1970/71 winter with some 70 larvae. They were kept under the same conditions as previously and the battle against mould was rejoined. By the end of May this year I had 33 pupae and two larvae still feeding up.

All these pupae hatched towards the end of June and all produced ♀ butterflies, about a quarter of which were *Excessa* forms in varying degrees. There were no ♀♀ and no sign of *ab. atrescens*. The two larvae that failed to pupate at the same time as the rest of the brood eventually died. In desperation I tried to get a mating with the last two ♂♂ to emerge, using wild ♂♂ but I was unsuccessful as no observed pairing took place although the conditions were exactly the same as for the previous summer..

Although the result of this breeding experiment was not what I had hoped for at least it has shown that, whatever else it may be, the aberation *atrescens* is not a recessive and that it produces a gene in the  $F_2$  generation that is 100% lethal to the ♂♂ probably in the egg stage. As a by-product it has shown that the aberation *excessa* is a recessive. It has been suggested to me that as *ab. atrescens* occurs in both sexes, and in fact is more frequent in the ♂ than the ♀, it may prove to be environmental. This may well be so but why then should it produce the lethal gene? I just don't know, and would welcome suggestions.

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SECOND BROOD *STERRHA TRIGEMINATA* HAW.—It is not difficult to obtain a second brood of this species in captivity, but I have not seen it in the wild until this morning, when I found two very fresh males in my m.v. trap. No doubt the fine warm weather which we have experienced during the past month has induced a few larvae to forego hibernation, and it will be interesting to see whether any other species of this family follow suit.—D. O'KEEFFE, 51 Parkhill Road, Bexley, Kent. 24.ix.1971.